Chapter 1: Purpose and Need

1.1 PROPOSED ACTION

The Utah Department of Transportation (UDOT) and the Federal Highway Administration (FHWA) propose transportation improvements along State Route (SR) 92 between I-15 and the mouth of American Fork Canyon in northeastern Utah County. SR-92 passes through the cities of Lehi, Highland, and Cedar Hills. Figures 1-1 and 1-2 show the location of the project and the prominent landmarks in the vicinity of the project.

SR-92 is classified as an urban minor arterial and is generally a two-to-four lane corridor with turning lanes in some areas. The existing road is congested during peak travel periods, causing travelers to experience delays. In addition, the project area has exhibited and is expected to exhibit more growth and development in the future. This future growth is expected to worsen traffic conditions.

The proposed action is needed to alleviate congestion and improve traffic flow to meet the current and 2030 projected travel demand. This project is also needed to provide a transportation facility that improves travel times to and from I-15 for commuters.

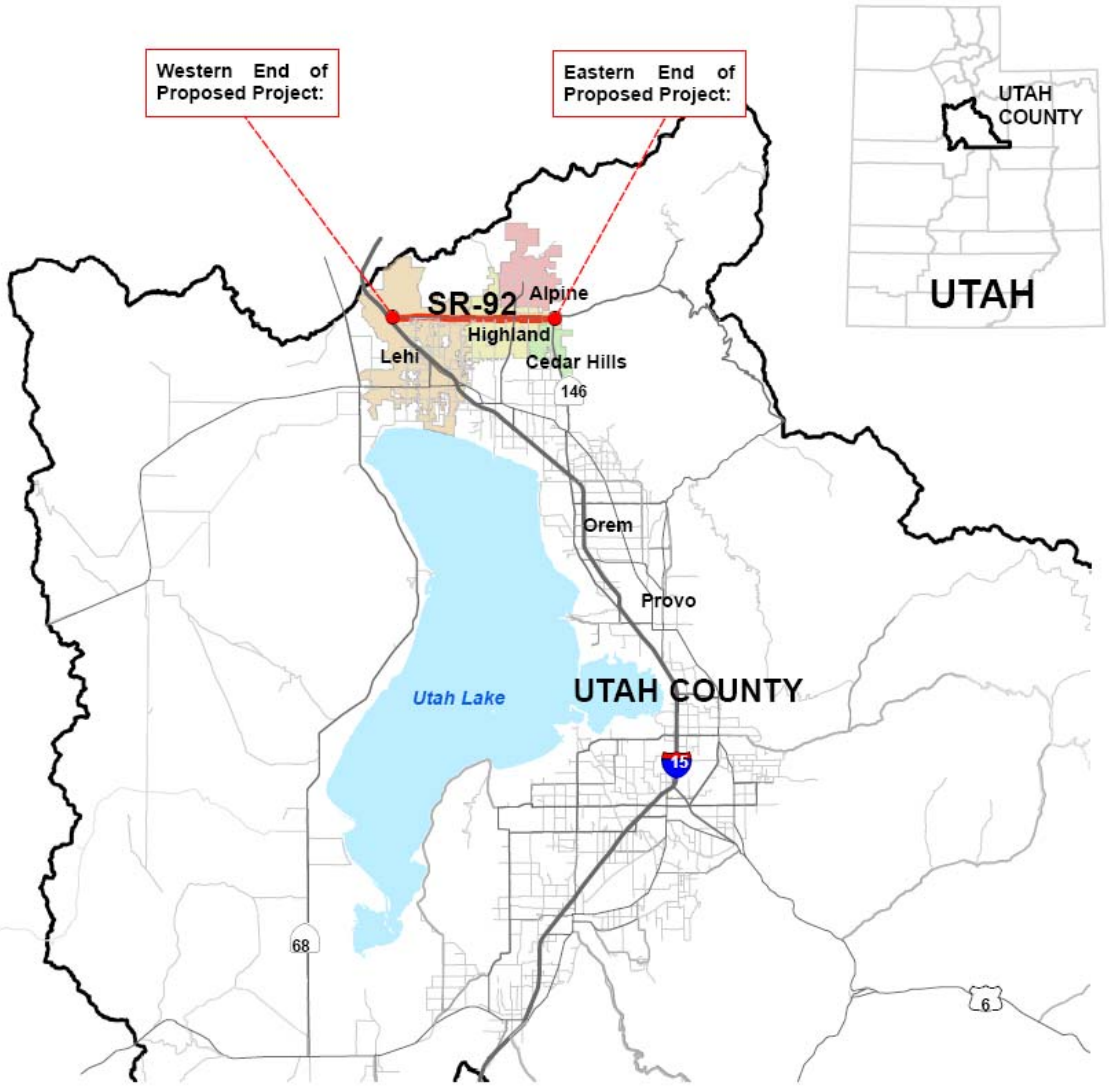
Project Location

The project is located in northern Utah County, Utah, as shown on Figure 1-1. The project is bounded by I-15 to the west and the Wasatch Mountains to the east. On the east end of the corridor, SR-92 continues up American Fork Canyon toward Mount Timpanogos—a popular recreational destination for tourists and locals.

The western half of the SR-92 corridor is characterized by farmland and undeveloped land that is quickly being developed for residential and commercial uses. Major commercial and industrial land use includes Cabela's—a sporting goods store constructed in 2005—on the northeast corner of the I-15 interchange and IM Flash Technologies at 1200 East. The western half of the corridor is also bounded by the Jordan Aqueduct on the north and the Provo Reservoir Canal on the south, both owned by the U.S. Department of the Interior, Bureau of Reclamation. For this reason, Reclamation is a cooperating agency for this project.

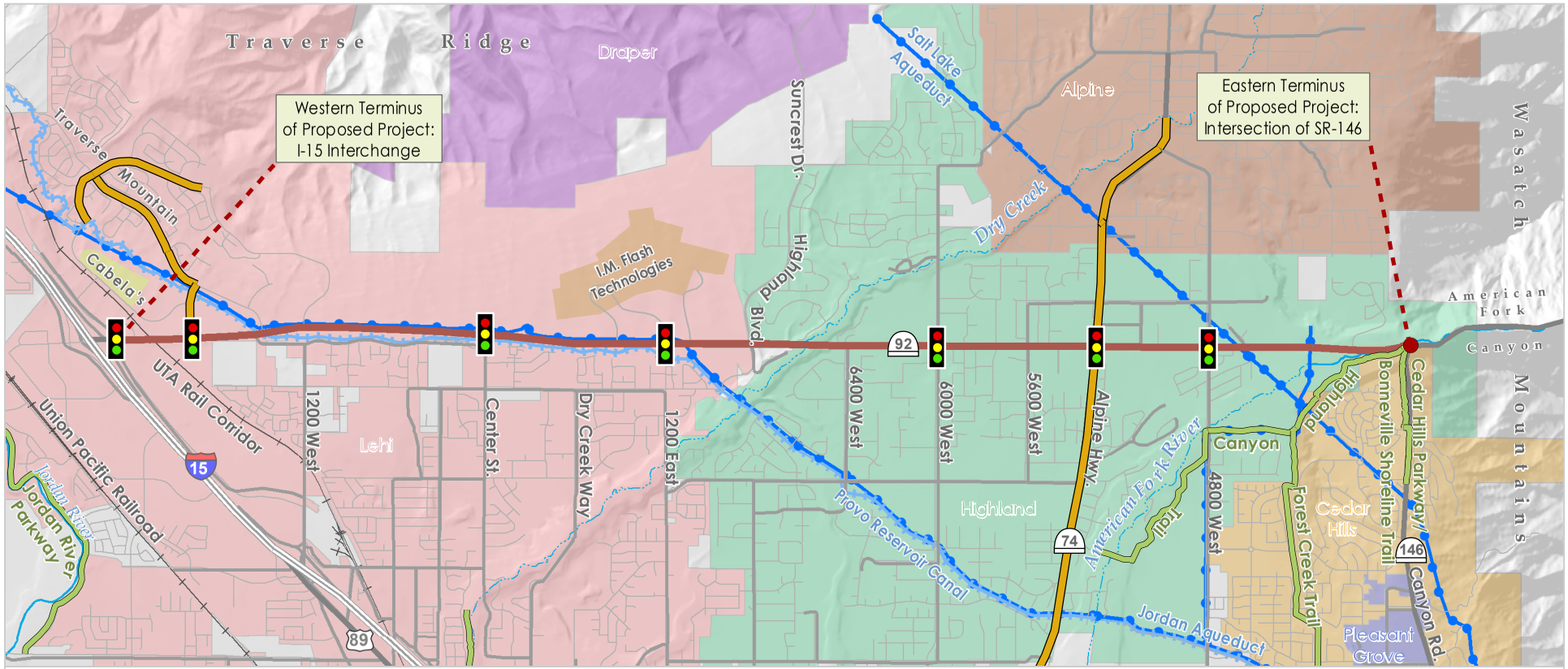
The eastern half of the corridor falls within the cities of Highland City and Cedar Hills, and its land use is more developed than the western portion of the corridor.

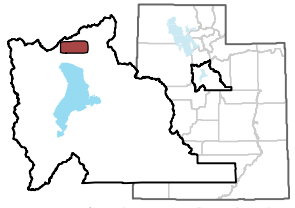
Figure 1-1: Project Location



Project Termini

The western project terminus is at the I-15 interchange. The eastern project terminus is at the intersection with SR-146 at the mouth of American Fork Canyon, as shown on Figure 1-2. The I-15 interchange is being evaluated as a part of the *I-15 Corridor Environmental Impact Statement* (EIS) for Salt Lake County and Utah County. The total length of the SR-92 project is 7.3 miles.





Project Area Context

Legend:

- SR-92 Project
- Interstate
- State Road
- Local Arterial
- Residential Street
- Aqueduct
- Canal
- Perennial Stream
- Intermittent Stream

- Draper
- Alpine
- Lehi
- Highland
- Cedar Hills
- Pleasant Grove

- Existing Bike Trail
- Bike Lanes Are on Road
- Existing Traffic Signal

N

0 0.5 1 Mile

SR-92: Lehi - Highland
Environmental Assessment

Figure 1-2
Project Area

Modal Relationships and System Linkage

SR-92 provides a critical link from I-15 to the communities of Lehi, Highland, Cedar Hills, and Alpine as well as to American Fork Canyon. Figures 1-2 and 1-3 show the existing and proposed modal relationships—including transit, rail, and bike trails. The Utah Transit Authority (UTA) currently provides express bus service from Salt Lake City to Provo on I-15; however, there is no bus service along the SR-92 corridor. The closest airport is the Provo Municipal Airport, located approximately 20 miles south of SR-92. In addition, the UTA rail line runs north-south along the I-15 corridor and intersects the project just east of I-15.

With completion of UTA's planned commuter rail project—FrontRunner—and future light rail projects, SR-92 will provide integral access to the regional transit system. (See Section 1.2 below for more detail.) Commuters will be able to travel west on SR-92 and transfer to either commuter rail or light rail. Access to the FrontRunner commuter rail will be provided at the planned intermodal station west of I-15. FrontRunner will eventually run north to Brigham City and south to Provo. The light rail will run from 1200 West—just south of SR-92—north to Salt Lake City.

1.2 DECISIONS TO BE MADE

At the conclusion of this environmental assessment (EA), FHWA must determine whether or not they should issue a finding of no significant impact (FONSI) or prepare an EIS. A FONSI is issued when environmental analysis and interagency review determine that a project would not have significant impacts on the quality of the environment. If it is found that a project would result in significant impacts, an EIS is required.

Reclamation must determine whether or not they should authorize work within federal lands or easements held for the Provo Reservoir Canal and Jordan Aqueduct. If FHWA issues a FONSI, Reclamation may adopt it to comply with the National Environmental Policy Act (NEPA).

1.3 PROJECT HISTORY AND STATUS

SR-92 was originally constructed in the early 1950s as a two-lane highway. Reconstruction in 1985 included some widening and grade changes at select locations. Since I-15 was constructed in 1975, SR-92 has provided a critical link to the cities of Lehi, Highland, Alpine, and Cedar Hills. The area surrounding the project has seen substantial population growth and development since 1985, which has resulted in the project corridor being included in several regional and local planning efforts.

Regional Transportation Plan

In June of 2007, the Mountainland Metropolitan Planning Organization (MPO)—also referred to as Mountainland Association of Governments (MAG)—updated their *Regional Transportation Plan* (RTP) for 2030. The MAG RTP is part of UDOT's statewide *Long Range Plan*. Under 23 Code of Federal Regulations (CFR) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), federally funded projects cannot be approved unless those projects are in a fiscally constrained and conforming RTP and a statewide transportation improvement program (STIP).

Fiscally Constrained Plan

The current MAG RTP includes a funded project to widen SR-92 to the Alpine Highway (SR-74). The plan also calls for an unfunded project to convert SR-92 to a six-lane expressway from I-15 to 6000 West. UDOT is currently pursuing additional funding to accommodate this project.

Air Quality Conformity

The current MAG RTP is a conforming plan. It received concurrence by FHWA and Federal Transit Administration (FTA) in July of 2007. The conforming plan is valid through July of 2011, when a new plan will replace it. SR-92 is included in the RTP and the current regional emissions analysis. Therefore, it is a conforming project.

Utah STIP 2008 to 2013

The STIP includes approximately $76.6 million in funding for the widening of SR-92 in Lehi and Highland. The STIP is currently being updated, and the new STIP will include additional funding for improvements between I-15 and SR-146.

Lehi City Master Transportation Plan (2004)

The Lehi City Master Transportation Plan, dated September 2004, shows improvements for SR-92 from I-15 to Dry Creek. This plan includes a new intersection at 1200 West, which was initially supposed to be constructed as a separate project. Since then, this intersection has been added to the SR-92 project to better coordinate the design.

Highland City Recommended Transportation Network (2007)

The *Highland City Recommended Transportation Network*, dated June 2007, shows improvements for SR-92 from Highland Boulevard to SR-74 as well as from 4800 West to just west of SR-146.

SR-92 Corridor Draft Environmental Assessment (2005)

In October 2003, the EA process was initiated for SR-92 between I-15 and SR-74. The purpose of the project was to address transportation demand caused by future growth, accessibility into developments, safety, and pavement conditions. The following activities were completed:

- A scoping process was conducted to gather input from agencies, local governments, and the public. Public open houses were held in Lehi and Highland in June 2004.
- UDOT prepared a traffic report that projected 2030 traffic conditions along the corridor.
- Some environmental data was collected.

The traffic report recommended that SR-92 be widened from two to four lanes between SR-74 and 1200 West and from two to six lanes between I-15 and 1200 West. The report also recommended signalization at Center Street, Triumph Boulevard, Traverse Mountain Boulevard, and 1200 West as well as additional through lanes at most intersections.

The EA was not completed due to insufficient funding. The findings from this previous effort have been considered and incorporated into this EA where applicable.

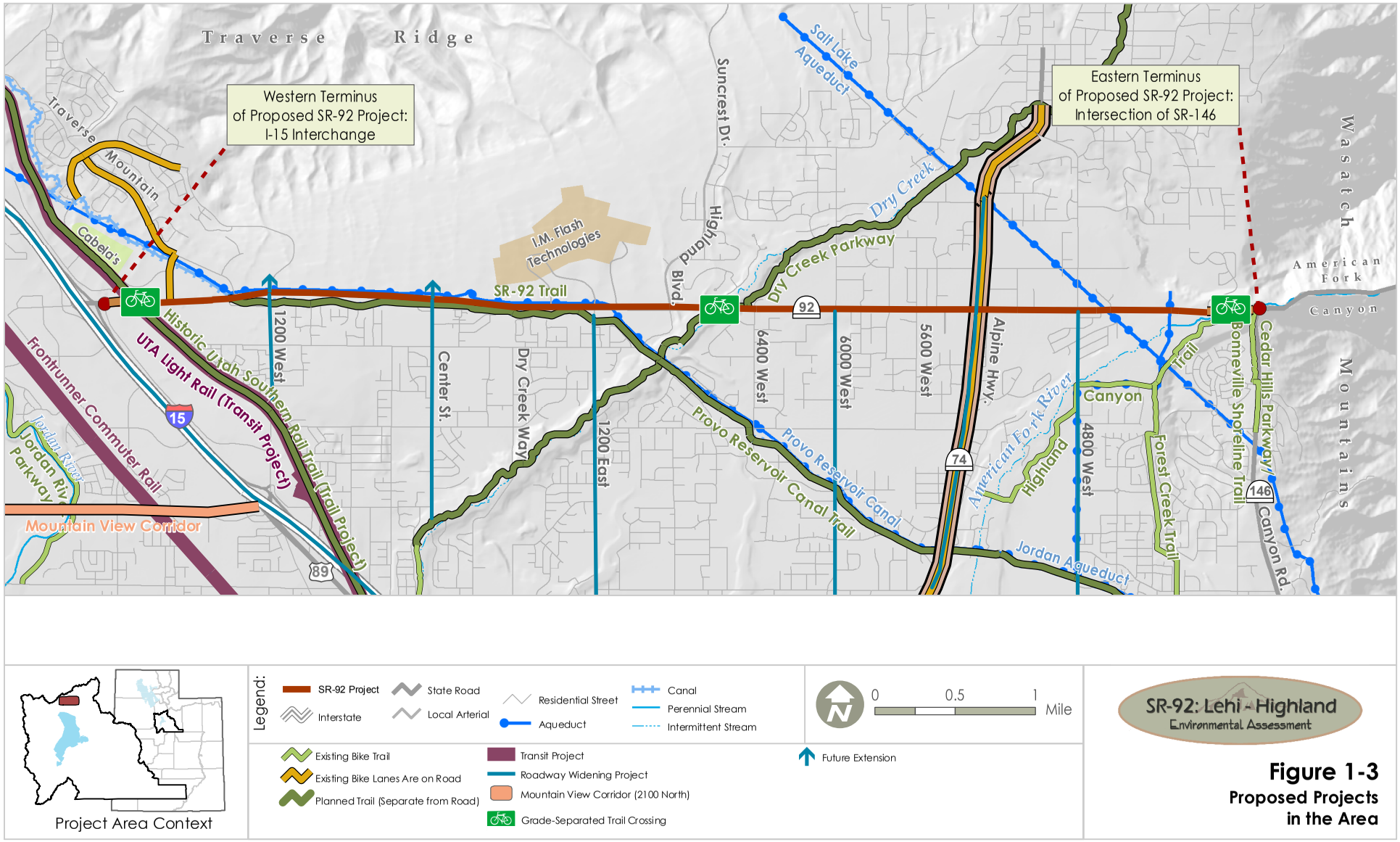
Other Proposed Actions in the Area

There are many planned projects in the vicinity of SR-92, as shown on Figure 1-3. These include different types of transportation projects—such as roads, transit, and trails—as well as water projects. The following is a description of the key projects in or near the project corridor:

- I-15 Corridor, Utah County and Salt Lake County: The proposed action in this EIS is for the widening and reconstruction of the I-15 mainline and interchanges, including the interchange at SR-92. The draft EIS was released in the fall of 2007. A record of decision was signed in August 2008.
- FrontRunner Commuter Rail, Provo to Salt Lake: Commuter rail is being planned along the I-15 corridor from Provo to Salt Lake City. This project directly serves the SR-92 corridor near the western terminus where a terminal is planned. The final environmental study report was released in the fall of 2007. In January of 2008, UTA published a decision document. Construction is scheduled to begin in 2008 and should be completed in 2012.
- Mountain View Corridor, I-80 to Utah Lake: This EIS is evaluating alternatives in Salt Lake County and Utah County to improve north-south transportation movement along the western periphery of the Wasatch Front. The draft EIS was released in the fall of 2007. A ROD is expected in the winter of 2008 to 2009.
- Light Rail, North Lehi to Salt Lake: UTA is developing plans for light rail from Salt Lake City to Lehi. The light rail corridor crosses SR-92, just east of I-15. The southern terminus is just south of SR-92, near 1200 West. The project has been identified as a Phase 3: 2016 to 2030 project in the MAG RTP.
- Local Infrastructure Improvements: The *Lehi City Master Transportation Plan* calls for an update of typical cross-street sections that intersect the SR-92 corridor. These improvements include widening 1200 West to be a major arterial and Center Street and 1200 East to be major collectors. Highland's *Recommended Transportation Network* also calls for updates to cross-streets intersecting SR-92. This plan includes widening four corridors located just south of SR-92. 4800 West will be widened to a 5-lane arterial; 6000 West will be widened to a 3-lane major collector; and both 5600 West and 6400 West will be widened to 2-lane residential collectors.
- Provo Reservoir Canal: The Provo Reservoir Canal, currently owned by Reclamation, is located on the south side of SR-92 for several miles. The Provo River Water Users Association (PRWUA) operates the canal and has requested permission from Reclamation to do the following: 1) transfer the canal's title to PRWUA; 2) enclose the canal; and 3) construct a trail on top of the canal after it is enclosed. Reclamation conducted an EA and issued a FONSI on both the title transfer and the enclosure. PRWUA and Reclamation are still negotiating the terms of the title transfer, and PRWUA is obtaining funding for the canal enclosure. FHWA, UDOT, and Reclamation are conducting an EA for the trail construction. FHWA, UDOT, Reclamation, and PRWUA agreed to coordinate closely on the design of the SR-92 improvements and proposed trail to minimize impacts to the trail and to protect the ability to operate and maintain existing and proposed water transmission facilities.
- Historic Utah Southern Rail Trail: The proposed Historic Utah Southern Rail Trail would begin at the point of the mountain and follow the existing UTA corridor east of I-15 to American Fork's city boundary. To the north, the trail would link to the proposed Point-of-the-Mountain Trail in Salt Lake County and eventually serve as the backbone for a regional trail system throughout Salt Lake County and Utah County. An EA is currently

being developed, with funding from both MAG and Lehi. Once this study has been completed, Lehi will pursue additional funds for construction. Coordination with the Historic Utah Southern Rail Trail project regarding its crossing of SR-92 is taking place.

- Bonneville Shoreline Trail Crossing: The Bonneville Shoreline Trail is planned to eventually run for 250 miles from Nephi north through Logan into Idaho along the eastern shore of ancient Lake Bonneville. South of SR-92, the Bonneville Shoreline Trail joins with the Cedar Hills Parkway and runs north to the intersection of SR-92 and SR-146. An underpass is planned immediately west of SR-146 to take the trail under SR-92 where it will continue to the north. Because this project proposes improvements to the intersection with SR-92 and SR-146, the Bonneville Shoreline Trail underpass has been added to the SR-92 project.



SR-92: Lehi - Highland
Environmental Assessment

Figure 1-3
Proposed Projects in the Area

1.4 PURPOSE OF THE PROJECT

The purpose of this project is to do the following:

- Alleviate congestion and improve traffic flow to meet the 2030 projected travel demand
- Provide a transportation facility that improves travel times to and from I-15 through the year 2030

1.5 SECONDARY PURPOSE OF THE PROJECT

The secondary purpose of this project is to do the following:

- Accommodate bicycles and pedestrians
- Balance needs of existing and planned access points with improved traffic flow
- Provide improvements that are compatible with Lehi's and Highland's development plans and standards and that are an asset to these communities

1.6 NEED FOR THE PROJECT

The needs for the project are based on current congested traffic conditions, projected population growth and development, and projected future traffic conditions. Project needs are summarized as the following:

- Congestion and Traffic Flow: SR-92 is currently congested during peak travel times. The project area has undergone population growth and is expected to continue growing as seen in Table 1-2. By 2030, operations are expected to breakdown if no improvements are made. Travelers will experience unpredictable flows, unacceptable progression, and excessive delays.
- Deteriorating Travel Time: Travel time through the corridor is deteriorating and would continue to deteriorate if no improvements are made.
- Bicycle and Pedestrian Needs: Connectivity for planned bicycle and pedestrian trails across or along SR-92 is incomplete. Also, some sections of the corridor do not have sufficient width to accommodate bicycles on the roadway.
- Access Management Needs: There are numerous existing and planned access points (i.e., driveways and streets) along SR-92. These accesses are necessary to provide ingress and egress to homes and businesses, but excessive accesses can also impede traffic flow and increase conflict potential. Accesses need to be balanced with traffic flow. To create this balance, UDOT has developed policy and guidance for access management (see UDOT 2006).
- Local Community Needs: Lehi and Highland have approved site development plans, and Highland has developed a standard detail for a landscaped parkway area adjacent to SR-92. These features are important to the local communities.

Specific needs are discussed in the following sections.

Congestion and Traffic Flow

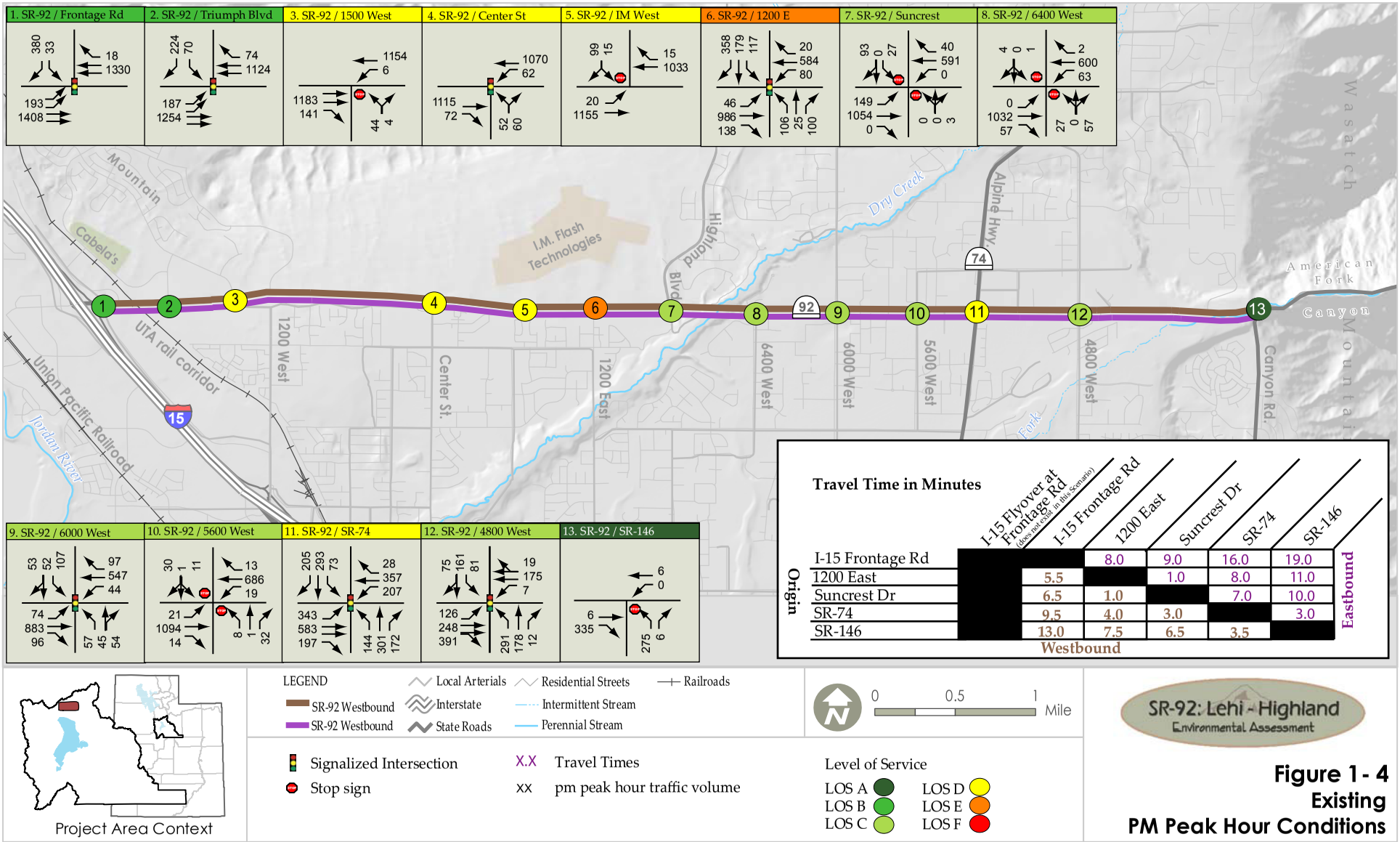
Level of service (LOS) is a measure of congestion and operating conditions on roadways, as shown on Table 1-1. UDOT's goal is to achieve a LOS D, which is considered acceptable in urban areas. Examples of severe congestion and unstable traffic flow are also shown in Table 1-1.

Table 1-1: Categories of LOS

LOS	Example	Operating Characteristics	Average Delay at Signalized Intersection (Per Vehicle)
LOS A		Free Flow / Insignificant Delay: Extremely favorable progression—individual users are virtually unaffected by others in the traffic stream.	0 – 10 seconds
LOS B		Stable Operations / Minimum Delays: Good progression—the presence of other users in the traffic stream becomes noticeable.	Over 10 – 20 seconds
LOS C		Stable Operations / Acceptable Delays: Fair Progression—the operation of individual users is affected by interactions with others in the traffic stream.	Over 20 – 35 seconds
LOS D		Approaching Unstable Flows / Tolerable Delays: Marginal progression—operating conditions are noticeably more constrained.	Over 35 – 55 seconds
LOS E		Unstable Operations / Significant Delays Can Occur: Poor progression—operating conditions are at or near capacity.	Over 55 – 80 seconds
LOS F		Forced, Unpredictable Flows / Excessive Delays: Unacceptable progression—operating conditions are forced or broken down.	Over 80 seconds

Source: Fehr & Peers data, based on Transportation Research Board, National Research Council 2000

Traffic conditions for the intersections along SR-92 currently range from A to E, and intersection delay ranges from 7.4 to 72 seconds per vehicle; see Table 1-3 and Figure 1-4 for the existing LOS at intersections. Drivers experience some congestion and unstable traffic flow, particularly at peak times.



SR-92: Lehi - Highland
Environmental Assessment

Figure 1 - 4
Existing
PM Peak Hour Conditions

As population increases, SR-92 will have to accommodate even more vehicles; traffic volumes will more than double in many locations. The areas surrounding SR-92 have seen tremendous population, employment, and development growth. The area is expected to continue growing as the population increases and land becomes more developed, especially on the west end of the corridor. The 1980 census recorded 218,106 residents in Utah County; by 2000, that number had grown to 368,536. MAG estimates the county's 2006 population at 475,425 and projects the 2030 population to be approximately 804,112. Table 1-2 shows additional population growth forecasts.

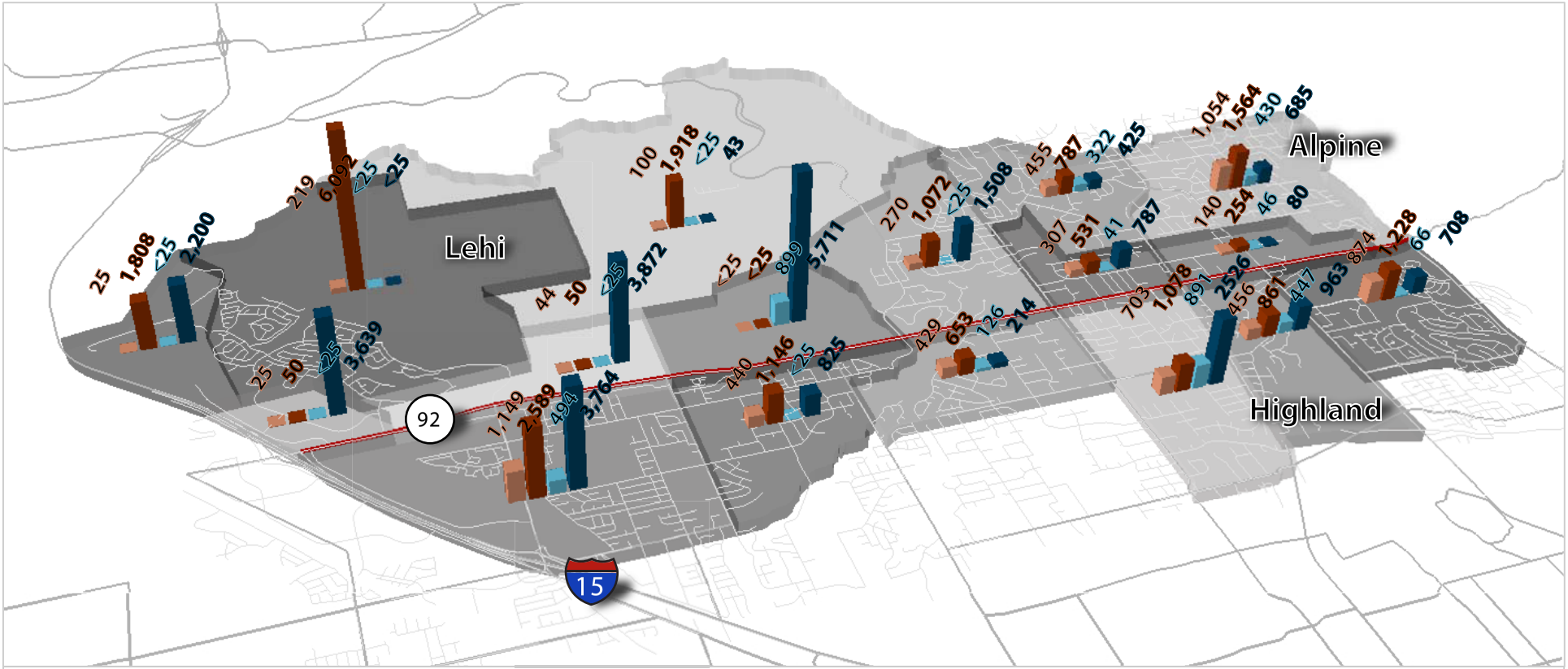
Table 1-2: Utah County Population Forecasts*

	2000 – 2001	2010	2020	2030
Utah County Population	368,536	527,502	661,319	804,112
Alpine City Population	7,146	10,742	13,022	15,205
Cedar Hills Population	3,094	10,298	11,501	12,280
Highland City Population	8,172	18,055	22,654	24,524
Lehi City Population	19,028	40,423	62,516	77,064

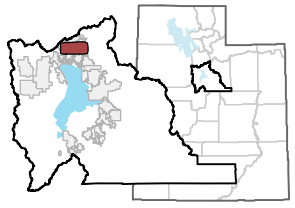
** This information was accessed on April 28, 2008 from the Governor's Office of Planning and Budget (GOPB) website.*

Source: GOPB 2005

There are several planned developments in the area that are contributing to travel demand on the corridor. Figure 1-5 shows projected employment and population growth. The Traverse Mountain development is planning over 8,000 residential units as well as office and retail spaces; the Suncrest development includes about 3,800 residential units. Major traffic generators also include Cabela's and IM Flash Technologies. New developments not only result in additional vehicles on SR-92, they also result in additional access points, such as driveways and intersections. There are agreements in place to allow additional access for future development.



Total Employment and Total Households by Traffic Analysis Zone



LEGEND

SR-92 Project

Local Arterials and Interstate

Residential Streets

Not to Scale

Study TAZ

2005 Households

2030 Households

2005 Employment

2030 Employment

SR-92: Lehi - Highland
Environmental Assessment

Figure 1-5

Total Households 2005-2030
Total Employment 2005-2030

Without adding capacity to SR-92, future traffic conditions will worsen. Current traffic volumes on SR-92 range from 7,000 to 24,000 vehicles per day, depending on the location along the corridor. Future traffic volumes are projected to range from 14,000 to 67,000 vehicles per day by 2030. If no improvements are made, operations on 90 percent of the corridor and at 15 out of 17 intersections along the corridor are expected to breakdown to an unacceptable LOS of E or F. Figure 1-6 shows the LOS and travel times for 2030 without improvements, and Table 1-3 shows existing and 2030 LOS. The 2030 scenario assumes that planned accesses will be constructed without adding additional capacity along SR-92; for example, there will be new intersections where Traverse Mountain is currently constructing roads.

Table 1-3: Existing and 2030 Intersection LOS

Intersection	Existing LOS	2030 LOS
Frontage Road	B	F
Triumph Boulevard	B	F
Traverse Mountain Road B	Not Constructed	F
1500 West	B	Will Be Removed
1200 West	Not Constructed	F
Traverse Mountain Road F	Not Constructed	F
500 West	Not Constructed	F
Center Street	D	F
IM Flash Access A	C	F
1200 East (IM Flash Access B)	E	F
IM Flash Access C	Not Constructed	F
Highland Boulevard	A	F
6400 West	A	F
6000 West	C	F
5600 West	A	F
SR-74 (5300 West)	D	F
4800 West	C	C
SR-146	A	A

Source: Fehr and Peers 2007a

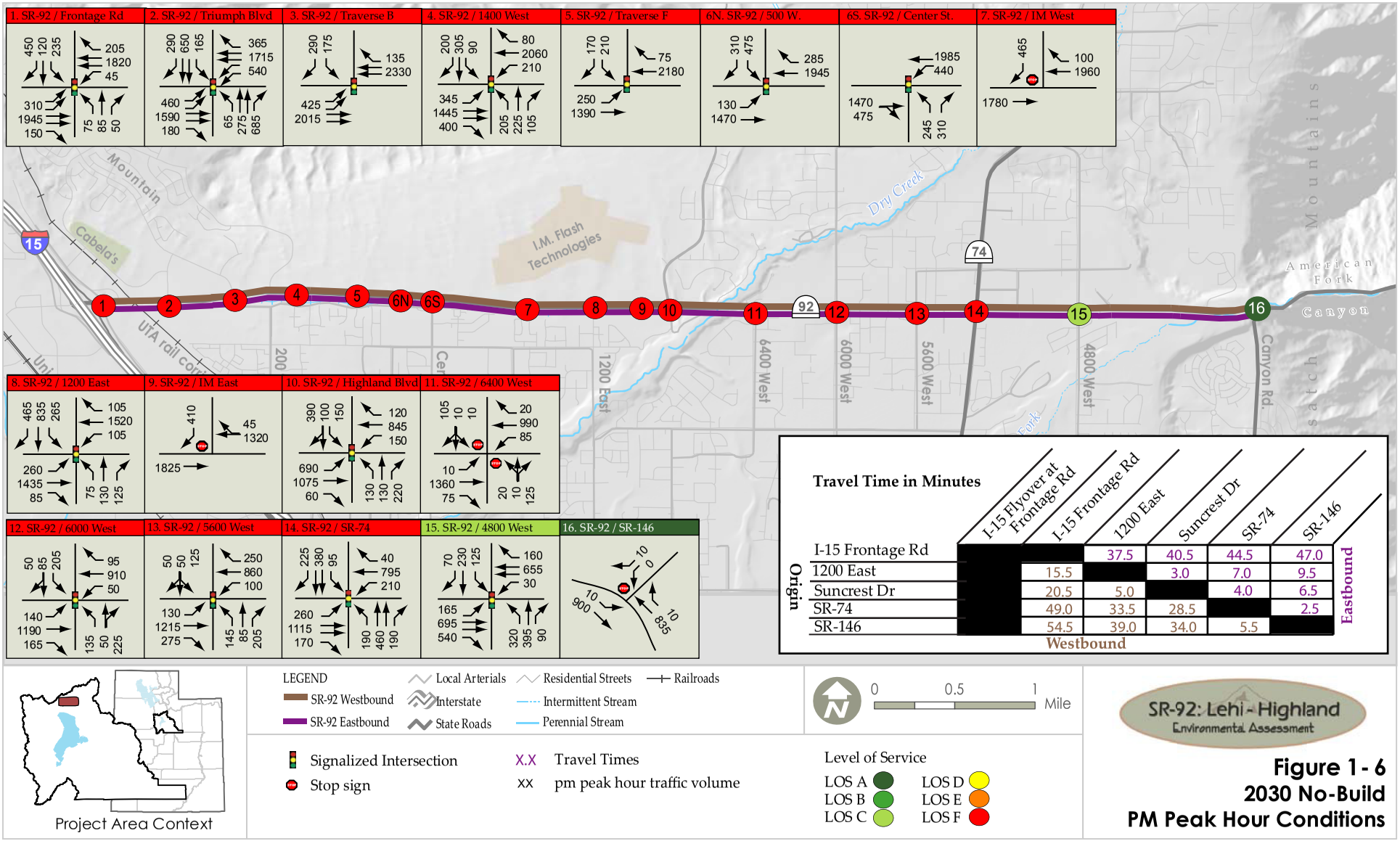


Figure 1 - 6
2030 No-Build
PM Peak Hour Conditions

Travel Time

SR-92 is the primary east-west arterial connector for vehicles accessing I-15 in northern Utah County. Input received during the scoping process indicates that access to and from I-15 is important for most of the corridor users. In addition to LOS, travel time can be used as a measure of congestion and operating conditions on roadways. Table 1-4 shows the existing and projected travel times along the corridor. The first number shown represents the minutes it currently takes to get from one location to the other; the second number represents how long it will take in 2030 if no improvements are made to SR-92. For example, it currently takes 13 minutes to travel westbound from SR-146 to the I-15 frontage road using SR-92 during the evening peak-hour commute. In 2030, it would take 54.5 minutes to make the same trip if no improvements are made. This represents a 315 percent increase in travel time along the corridor.

Table 1-4: Existing and 2030 Corridor Travel Time in Minutes*

	I-15 Frontage Road	1200 East	Highland Boulevard	SR-74	SR-146
Eastbound (Existing/2030)					
I-15 Frontage Road		8.0/37.5	9.0/40.5	16.0/44.5	19.0/47.0
1200 East			1.0/3.0	8.0/7.0	11.0/9.5
Highland Boulevard				7.0/4.0	10.0/6.5
SR-74					3.0/2.5
Westbound (Existing/2030)					
1200 East	5.5/15.5				
Highland Boulevard	6.5/20.5	1.0/5.0			
SR-72	9.5/49.0	4.0/33.5	3.0/28.5		
SR-146	13.0/54.5	7.5/39.0	6.5/34.0	3.5/5.5	

** Based on evening peak-hour travel times.*

Source: Fehr and Peers 2007a

Bicycle and Pedestrian Needs

To be consistent with RTPs, UDOT considers adding trails or pedestrian facilities when making transportation improvements. During the scoping process, roughly half of the comments received regarding bicycle use was in support of bicycle accommodations on the road; the other half was in support of a trail separated from the road. The bicycle and pedestrian needs for this project include providing connectivity for existing and planned trails, accommodating bicyclists on the road, and providing safe pedestrian crossing.

Trail Connectivity

SR-92 has two existing multi-use paved trails near the mouth of American Fork Canyon: the Cedar Hills/Bonneville Shoreline Trail and the Highland Canyon Trail, as shown on Figure 1-2. MAG has also planned an integrated trail system to allow the safe and aesthetically pleasing passage of cyclists, runners, and/or walkers in northern Utah County. Planned multi-use trails near SR-92 include the Provo Reservoir Canal Trail, the Historic Utah Southern Rail Trail, the Dry Creek Parkway, and the Bonneville Shoreline Trail. The latter three trails are planned to cross SR-92, as shown on Figure 1-3. The plan also calls for a trail along SR-92 between I-15 and SR-74. The Provo Reservoir Canal Trail, which partially parallels SR-92, would satisfy part of this need. However, there are sections along SR-92 where a separate trail is necessary. Providing connectivity between the trails is critical; this connectivity allows users to travel from one trail to the other without having to cross or travel on busy roads.

Road Cyclists

The trails discussed above do not negate the need for more room along SR-92 for bicyclists. While many cyclists will use the planned multi-use trails, many road cyclists will likely continue to use the road. Road cyclists are not precluded from using the planned multi-use trails, but many simply prefer the continuity and direct routing of roads. Road cyclists moving at higher speeds present a danger to slower moving trail users. Shared-use paths often follow circuitous routes and are used by slower moving cyclists and pedestrians, in-line skaters, pedestrians with pets, and children with unpredictable riding patterns.

Road cyclists also use SR-92 to access Highland Boulevard and American Fork Canyon. The shoulder along SR-92 is generally eight feet but as narrow as four feet in some areas. According to the American Association of State Highway and Transportation Officials' (AASHTO's) *Guide for the Development of Bicycle Facilities,* a shoulder width of five feet or greater along a roadway is preferable, and additional widths are more desirable where motor vehicle speeds exceed 50 mph—for example, on SR-92 in Lehi.

Safe Pedestrian Crossings

Many of the existing intersections lack pedestrian-crossing facilities. There are currently 13 intersections along the corridor, seven of which are signalized. There are full pedestrian-crossing facilities at only three intersections. The intersections at 6000 West, SR-74, and 4800 west are equipped with crosswalks, pedestrian push buttons, and pedestrian signal heads on all four legs of the intersection. There is also a pedestrian facility at 1200 East that facilitates the crossing of two out of four legs of the intersection. If no improvements are made, pedestrian safety will deteriorate as traffic increases in the future.

Access

There are numerous existing accesses along SR-92. Accesses or access points are points along a corridor that allow a vehicle to enter or exit the roadway, such as driveways or intersecting roads. These accesses are necessary, but excessive access points can create problems for through traffic, like slowing, and can increase conflict potential.

To balance safety, direct access, and mobility, UDOT classifies corridors into five categories based on speed and traffic volumes. Between I-15 and 5600 West, SR-92 is a Category 3 roadway. A Category 3 classification is appropriate for highways with a speed equal to or greater than 50 mph and with relatively high traffic volumes. In this area, signalized intersections should not be spaced closer than one-half mile, and there should not be any unsignalized intersections or private accesses. This requirement equates to an access density of 0.5 accesses per mile. Between 5600 West and 4800 West and between 4800 West and SR-146, SR-92 is a Category 5 roadway. A Category 5 classification is appropriate for a highway with moderate speed and with moderate to high traffic volumes. In this area, signalized intersections should not be spaced closer than one-half mile, unsignalized intersections should not be spaced closer than 660 feet, and private property accesses should not be spaced closer than 350 feet. This requirement equates to a maximum access density of 15 accesses per mile. By classifying roadways into these five categories, UDOT is able to determine the access density that is appropriate for a certain community and can then implement access management.

Access management also helps to balance safety, direct access, and mobility. It is the control of the types and spacing of driveways and intersections along a corridor. Proper access

management improves traffic operations by restricting dangerous and/or disruptive traffic movements. UDOT has established standards and procedures for access management to prevent increased accidents, congestion, and delays. Standards include minimum spacing recommendations between access points for different types of facilities. A grant of access permit is required for the construction of new accesses or the modification of existing access points on state roads. On the west end of the corridor, there are relatively few existing access points. UDOT, Lehi City, and major land owners have entered into agreements regarding the future installation and spacing of access points. On the east end of the corridor, there are numerous existing access points. Table 1-5 shows the approximate number of access points for segments of SR-92. In this table, the north-south roadway defining the boundary between segments is not counted as an access in either segment.

Table 1-5: Access Density

Roadway Segment	Length (Miles)	Number of Access Points	Actual Access Density (Accesses/Mile)	Roadway Category	Recommended Access Density (Accesses/Mile)
Frontage Road – Triumph Blvd	0.31	0	0.0	3	0.5
Triumph Blvd – 1500 West	0.37	0	0.0	3	0.5
1500 West – Center Street	1.28	1	0.8	3	0.5
Center Street – 1200 East	1.01	1	1.0	3	0.5
1200 East – Highland Blvd	0.47	0	0.0	3	0.5
Highland Blvd – 6400 West	0.53	2	3.8	3	0.5
6400 West – 6000 West	0.50	2	4.0	3	0.5
6000 West – 5600 West	0.51	7	13.8	3	0.5
5600 West – SR-74	0.39	10	26.0	5	15
SR-74 – 4800 West	0.62	44	70.9	5	15
4800 West – SR-146	1.15	25	21.9	3	0.5

Source: Fehr & Peers 2007a; UDOT Division of Project Development—Railroads and Utilities Section 2006

As shown in the table above, actual access density exceeds recommended values on the east end of the corridor. However, there is a grandfather clause for existing and already planned access points. The recommended values in the table are for granting new access points only.

Access management can be improved without eliminating existing access points. It may be possible to relocate the location where a side street ties into SR-92, thereby improving the spacing between access points. It also may be possible to consolidate multiple access points into one location. This is generally done for commercial developments with several businesses.

Local Community Needs

Context sensitive solutions (CSS) is a philosophy that guides UDOT from the planning phases through the construction and maintenance phases of a transportation project. Its goals are to

create a transportation system that is in harmony with the community and environment. The guiding principals of CSS are as follows:

- Address the transportation need
- Be an asset to the community
- Be compatible with the natural and built environment

UDOT is incorporating the CSS philosophy into the SR-92, Lehi to Highland, project and is striving for a balance between these three principles. Lehi and Highland have existing developments along SR-92, including IM Flash Technologies and Highland Town Center. These cities have also approved site plans for future developments along the corridor, including Traverse Mountain, Smith's Marketplace, and Highland Marketplace. Minimizing impacts to existing and planned developments is important to both cities.

Highland has developed a standard for a landscaped area adjacent to SR-92. The standard is referred to as the *parkway landscape detail*. The parkway is a 29-foot wide strip with a meandering sidewalk and is landscaped with grass and trees. Throughout the scoping process, Highland has indicated that the parkway is an important feature for their community character. Input from the public indicates that trees are also important and should be preserved if at all possible.

1.7 PURPOSE AND NEED OBJECTIVES

Specific objectives were developed to gauge how well an alternative meets the project's purpose and need as detailed in Table 1-6 below. These objectives take into consideration UDOT standards and policies, technical studies, engineering judgment, and input from agencies, stakeholders, and the public.

Table 1-6: Purpose and Need Objectives

Primary Purpose and Need	Objective/Measure of Effectiveness
Alleviate congestion and improve traffic flow to meet the 2030 projected travel demand.	• Provide a LOS D or better for all intersections along the corridor for the year 2030.
Provide a transportation facility that improves travel times to and from I-15 through the year 2030.	• Improve existing travel time to and from I-15 for commuters and provide the best overall corridor travel time that can be achieved in balance with impacts to the natural and built environment.
Secondary Purpose and Need	**Objective/Measure of Effectiveness**
Accommodate bicycles and pedestrians.	• Provide continuous shoulders with an appropriate width, based on UDOT standards and AASHTO guidance, to accommodate bicycles. • Provide pedestrian access across SR-92 at signalized intersections and along SR-92 at appropriate locations. • Provide connectivity for the multi-use trail system between the planned Historic Utah Southern Rail Trail and Provo Reservoir Canal Trail and the existing trails at the mouth of the American Fork Canyon. • Accommodate grade-separated crossings at planned locations, including the Historic Utah Southern Rail Trail, the Dry Creek Parkway, and the Bonneville Shoreline Trail.
Balance needs of existing and planned access points with improved traffic flow.	• Consolidate or relocate accesses to improve spacing where possible. • Control left turns with signals at appropriate locations. • Accommodate existing and planned access points.
Provide improvements that are compatible with Lehi's and Highland's development plans and standards and that are an asset to these communities.	• Accommodate Highland's landscaped parkway detail. • Accommodate development site layout plans that have already been approved. • Preserve trees where possible.